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ABSTRACT

Nutrition is well-recognized as a necessary component of educational programs for physicians. This is to be valued in that of all factors affecting health in the United States, none is more important than nutrition. This can be argued from various perspectives, including health promotion, disease prevention, and therapeutic management. In all cases, serious consideration of nutrition related issues in the practice is seen to be one means to achieve cost-effective medical care. These modules were developed to provide more practical knowledge for health care providers, and in particular primary care physicians. This module is designed to help primary care physicians become critical reviewers of nutritional information. These skills will help the physician to be able to critique nutritional claims and teach patients how to assess fad diets and popular nutritional products. Included are learning goals and objectives, a self-check of achievement with regard to goals, and references for the physician and for the physician to recommend to patients. Appendices include patient handouts concerning avoidance of nutritional quackery, and the dangers of herbal teas. (CW)

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24. **Behaviorial and Neurological Disorders**
25. **Preventing Hospital and Home Malnutrition**
26. **Questions About Common Ailments**

Faculty Guide (includes comprehensive index for Modules 1-26)

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20 Nutrition in Health Promotion: Decoding Fad Diets

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Introduction

Every American is in some way affected by nutrition fallacies. Newspaper ads lure people to purchase products for treatment of self-diagnosed ailments. Magazines and books promote claims that manipulation of the diet and use of "supplements" are essential to health. Supermarkets have "health foods" and "supplements" prominently displayed for their customers' "benefit." And nearly every shopping center contains a health food store with rows of high-priced products and scores of pamphlets which tell the consumer what to buy.

Physicians recognize that nutrition fallacies, fad diets, and bogus nutrition products are commonplace in our society. However, patients often do not have the knowledge to evaluate diets and nutrition products. How can you guide patients away from use of fad diets and nutrition products which are not beneficial? How can you help patients evaluate non-scientific nutrition literature which is used to support nutrition fallacies? The answers to these and other questions are included in this module.

Goal

The goal of this module is to help the primary care physician become a critical reviewer of nutrition information. As a patient advocate, the physician will be able to critique nutritional claims and teach patients how to assess fad diets and popular nutritional products.

Objectives

Upon completion of this module, you will be able to:

1. *Evaluate fad diets and the claims of nutrition products in a scientific manner.*
2. *Inform patients how to determine potential dangers and benefits of fad diets and nutrition supplements.*
3. *Compile a data base of sound sources of diet and nutrition product information for personal and patient education.*
4. *Guide patients away from use of unnecessary nutrition products.*
5. *Teach patients how to make sound decisions when confronted with fad diets and claims.*
6. *Evaluate and apply scientific nutrition literature to clinical practice.*

Identifying Sound, Scientific Literature in Order to Evaluate Nutrition Claims

As a physician, you can help protect your patients from nutrition fallacies by identifying faulty conclusions from the literature and explaining their pitfalls during office visits. Anecdotal evidence and epidemiological research do not determine cause/effect relationships. Controls are needed so that only one variable is changed at a time before cause and effect is a valid conclusion.

Freedom of the press allows publication of any point of view, regardless of how inaccurate or outrageous it might be. Often, misinformation or claims designed to sell a product reach the public via the media. Lay people may not understand how to evaluate evidence to determine if a claim or conclusion has merit. They frequently accept as "truth" that which sounds logical to them. Physicians need to be able to identify sound, scientific evidence if they are to evaluate popular nutrition claims and help patients avoid nutrition fallacies.

Many nutrition fallacies are based upon anecdotal evidence. Such evidence should not be interpreted to prove cause and effect because variables are not controlled. It is appropriate to use anecdotal evidence, such as a series of case reports, to generate hypotheses. However, each hypothesis must be tested by an observational study which utilizes comparison groups. Only after completion of an observational study can an experiment be designed which attempts to identify cause and effect.

Some fad claims are based upon epidemiological studies which attempt to correlate factors between two or more populations. Scientists agree that such studies cannot be used to determine cause-effect relationships because controls are hard to achieve. When populations are compared, one should ask, "What factors are different between the populations in the study?" Differences in genetics, climate, lifestyle, and food intake are examples of variables which can skew the interpretation of epidemiological research.

If populations used in an epidemiological study are as similar as possible, one should ask, "How important is the influence of one variable upon another?" This can be approximated by squaring the correlation coefficient. For example, a correlation coefficient of 0.4 would suggest that 0.16 or 16% of the variation of one factor could be attributed to the other factor; i.e., 84% of the variation would be due to some other factor(s).

When experimental studies are critiqued, one should ask, "How many variables were changed and how were they changed during the study?" One should also ask, "Are the conclusions appropriate?" It is obviously misleading to test one variable experimentally and then apply the conclusions to another untested variable. Yet this kind of error often appears in the scientific literature.

When scientific literature is interpreted, regardless of which type of research is reported, health professionals must ask whether or not results are in conflict with knowledge already known about the subject. If not in conflict, results can be used to extend current knowledge. If results are in conflict, one must consider two possibilities: either reexamination of previous knowledge is necessary, or the authors have made an error in study design or interpretation. Careful review of the assumptions, approach, and interpretation should help determine which of these possibilities is most likely.

Recent articles which promote nutrition fallacies have begun to list references from journals which "support" their claims. Often, the studies cited contain conclusions which have been taken out of context. Some quotations are made from journals which were published a long time ago and ignore more recent research which does not support claims made. Other references cited are published in journals which are not subject to peer review. If the public is to be protected from such shams, the physician must be skilled at identifying faulty conclusions from the literature and explaining their pitfalls to patients.

Why There Are So Many Fad Diets

Most patients have followed one or more fad diets in an effort to achieve quick weight loss. Fad diets attempt to cure a weight problem, but they often do not change eating habits or promote lasting weight control. Understanding why fad diets are popular is a first step in redirecting patients toward healthful weight-control methods.

Bookstore shelves are crowded with books which promise "quick, easy, guaranteed" weight loss. People

try one diet after another in search of "the diet" which will allow them to achieve their goal. There are many reasons why diet books continue their widespread popularity even though little, if any, weight loss is achieved and maintained.

1. *Cultural Pressure.* Many people have a strong cultural value that they must be "thin" to be accepted, successful, or beautiful. Often, this is an emotional issue.
2. *Unrealistic Expectations.* Most people search for a "magic cure" which is relatively easy and promises quick results. They want to believe that easy weight control is possible. "I just haven't found the right diet yet."
3. *Advertising Pressure.* Advertising suggests that famous celebrities have achieved their success and attractive figures by following such plans. Consumers often believe these claims.
4. *Peer Pressure.* Peer pressure may convince people that "everyone goes on diets."
5. *Unrealistic Plans.* Unrealistic plans for weight maintenance result in weight gain once "the diet" is stopped. People become trapped in a vicious cycle as they try diet after diet in an effort to find one which produces lasting results.

Diets are viewed by most people as a temporary change in behavior. They perceive them as a quick and easy approach which allows them to continue to eat whatever appeals to them in unlimited quantities. Fad diets attempt to correct a weight problem, but they are unsuccessful because they do not permanently change eating habits.

Two plausible reasons fad diets may not work include the "set point" theory and the "visualization" theory. The "setpoint" theory suggests that people have an internal mechanism which regulates body weight. Fad diets generally do not effectively lower or maintain weight below the setpoint. Internal mechanisms appear to continuously work to return weight to the predetermined setpoint level. Regular exercise, however, may help lower the setpoint, while a diet of high-fat foods may raise the setpoint.[1]

The "visualization" theory suggests that people must be able to "visualize" themselves at their weight goal. If they do not do this, they will subconsciously find ways to regain weight to achieve the weight which they picture for "themselves." This occurs even if they consciously wish to weigh less.[2] Fad diets usually do not help people learn to visualize themselves at their weight goal.

Most fad diets fail because they are based on gimmicks which defy laws of energy and biochemistry. Some suggest weight can be lost by eating unlimited quantities of certain foods. Others explain the weight loss process using bizarre descriptions of how the human body digests food and stores or loses fat. Such descriptions may sound logical to those who are not familiar with digestion, absorption, and metabolism. Fad diets often fail because they are monotonous, unpalatable, socially unacceptable, and/or cause unpleasant and sometimes harmful side effects.

Diets Which Are Sound

Sound weight-reduction diets are ones which are individualized to a patient's usual way of eating, to lifestyle, and to food preferences. Behavior modification, visualization, diet follow-up, and an exercise program are critical components of successful, permanent-weight-loss diet programs.

Sound weight-reduction diets are ones which do not promise miraculous cures but which are individualized to a patient's usual way of eating, to lifestyle, and to food preferences. A well-planned weight-reduction diet must take into account a patient's physical activity level when calculating the number of calories allowed for the day's intake. Certainly calories ingested must be less than calories expended, or the patient will not lose weight. Sound weight-reduction diets should promote no more than 1-2 pounds of fat loss per week, and in general should not be less than 1000-1200 kcal/day for women nor less than 1200-1500 kcal/day for men. At levels less than these, meeting the RDA for vitamins, minerals, and protein is difficult. Recommendations from the *Guide to Good Eating*[3] are good to keep in mind when planning sound weight-reduction diets. The recommendations in the Guide will provide approximately 1200 kcal/day. It is also wise to remember that weight-reduction diets should contain a minimum of 100 grams of carbohydrate daily in order to prevent ketosis, unless the patient is monitored frequently for various blood tests. Behavior modification, visualization, diet follow-up, and an exercise program are critical components of successful, permanent-weight-loss diet programs.

The physician can ask several questions to determine if a diet is not sound. If the answer is "yes" to any of the

following questions, the diet may not promote permanent weight control and may result in undesirable side effects:

- Does it promote quick, effortless weight loss?
- Does it claim that unlimited quantities of food can be eaten?
- Does it claim that the rate of weight loss can be increased by use of certain "supplements" and/or combinations of foods?
- Does it claim success based solely on anecdotal evidence and testimonials?
- Does it claim that "spot weight reduction" of body parts such as thighs and tummy is possible? Is the term "cellulite" used?
- Does it contain a limited variety of foods? Is the calorie level less than 1000-1200 kcal/day? Does it contain less than 0.8 gm of protein per kg of ideal body weight? Does it provide less than 100 gm of carbohydrate per day?
- Does it emphasize one type of food at the expense of other foods?
- Does it recommend periods of fasting?
- Does it promote use of diuretics or laxatives?
- Does it focus on diet without emphasizing the need for permanent changes in eating (and exercise) habits? Does it fail to include a plan for weight maintenance?
- Does it fail to encourage frequent follow-up counseling sessions with a dietitian or physician trained in nutrition and behavior modification? Does it fail to use weight-control support groups when indicated?
- Does it fail to teach people how to visualize themselves at their weight goal?

It is impossible to keep up with the amount of fad weight-loss diets and diet pills which appear yearly. Over the past several years, diets have generally divided themselves into six basic categories. Table 20-1 has been developed to assist you in classifying old diets, current fad diets, and "yet to be developed" fad diets for weight loss. Without knowing everything about the diet you can identify advantages, possible problems, and fallacies concerning these diets. Table 20-2, in similar format, contains information that you should know concerning over-the-counter diet pills for weight reduction.

It is often appropriate to refer patients for assistance in weight loss to one of several community self-help groups or group diet programs. Table 20-3 provides an identification of the most popular weight-loss groups and offers a critique of each program for assistance in helping you fit patients into a group if appropriate.

Redirecting the Patient to Use Sound Weight-Control Plans

Before the patient can make the critical choice of a sound weight-reduction diet over a fad weight-loss diet, a caring relationship between the physician and the patient must be established. Some patients may be skeptical of professional opinions about fad diets. Fad diets should be discredited without insulting the patient's intelligence.

As the physician, you are always in the business of health promotion and prevention of disease by directing patients to assume responsibility for their own health. Nowhere is this more evident than by assisting patients in achieving an appropriate weight for height. From experience you have learned that there are many positive ways (and there are other less positive ways) to approach patients regarding needed weight loss. Because it is essential to obtain the patient's consent and boost motivation to follow a well-planned weight-reduction diet before success can be achieved, the following important points should be remembered:

1. Patients must recognize that you care about them. A good relationship must be built before beliefs about "dieting" should be challenged.
2. Emotional needs of the patient must be met before scientific knowledge can be successfully used to discredit fad dieting.
3. It is helpful for you to identify benefits the patient expects from the fad diet. Alternatives can then be offered which help the patient achieve these benefits by using sound weight-control plans instead of fad diets.
4. The patient should be encouraged to compare the benefits of sound weight-control plans with the drawbacks and dangers of fad diets. Unnecessary

Table 20-1 What the Physician Should Know About Fad Diets

DIET CATEGORY	NAME OF DIET	HOW DIET WORKS	ADVANTAGES	POSSIBLE PROBLEMS	FALLACIES
Fasting	Fasting: The Ultimate Diet Fasting is a Way of Life	Rapid weight loss due to loss of lean body mass and fat.	Dieter is encouraged by rapid weight loss of water which may be mistaken for loss of fat.	Hypoglycemia, neutropenia, hyponatremia, hypokalemia, ketosis, dehydration, increased uric acid levels, nausea, dizziness, fatigue, alopecia, increased renal loss of phosphate and magnesium, negative nitrogen balance, loss of lean body mass, atrophy of organs such as the liver and heart, impaired cellular immunity, sudden death.[4] Does not educate the dieter how to maintain weight. Return to initial pre-fasting weight is likely once fast is stopped. If used, must be carefully monitored in a hospital setting.	Fasting cleanses the body of impurities. Fasting normalizes metabolism.
Low-protein, low-fat, high-carbohydrate diets	Pritikin Diet	Calories are limited automatically since most of intake consists of vegetables, whole grains, and fruits. Meat and fish are limited to 16 oz per week. Only 10% of calories come from fat.	Possible reduction of serum cholesterol, triglyceride, and uric acid levels. Promotes permanent changes in eating habits.	Unpalatable for those who enjoy meat (allows 2-3 oz meat/day). Extreme low fat level is difficult for most Americans to achieve, and is unpalatable for many. Nearly impossible to follow if one eats in restaurants. If protein intake is too low, it may increase risk of infection and result in poor wound healing. Possible negative nitrogen balance. Flatulence; possible iron-deficiency anemia since most iron is obtained from non-heme sources. Possible decreased absorption of trace minerals, calcium, and zinc due to increased intake of phytates.	Claims that the diet prevents degenerative diseases.
Ketogenic diets or low-carbohydrate (100 gm or less), high-protein, high-fat diets	Dr. Atkin's Diet Revolution Stillman's Diet DuPont Diet Air Force Diet Drinking Man's Diet Calories Don't Count Diet Dr. Charlton Frederick's Diet Beacon Hill Diet Scarsdale Diet	Rapid initial weight loss followed by slower but substantial weight loss. Highly effective diet due to low carbohydrate intake and reduced serum insulin level which inhibits lipogenesis.	Reduced hunger, palatable, socially acceptable. Should only be used in conjunction with nutrition counseling and behavior modification.	Elevated serum cholesterol and triglyceride levels, ketosis, hyponatremia, hypokalemia, hyperuricemia, dehydration. Specific blood changes in calcium, thiamin, riboflavin, ascorbic acid, folate, and vitamin A. Dizziness, fatigue. Possible renal failure if inadequate fluid intake bad breath. Does not educate the dieter on weight maintenance. Diuresis promotes loss of vitamins and minerals which may not be replaced by the diet.	Claims that the diet promotes production of "fat-mobilizing hormone" which mobilizes fat stores and reduces ketones. Actually the caloric value of ketones produced and excreted in 24 hours rarely exceeds 100 kcal. Claims that unlimited calories can be eaten as long as ketosis is present. Actually caloric intake will probably be limited because of the appetite depressant effect of ketosis.

Table 20-1 What the Physician Should Know About Fad Diets (Continued)

DIET CATEGORY	NAME OF DIET	HOW DIET WORKS	ADVANTAGES	POSSIBLE PROBLEMS	FALLACIES
Liquid protein-sparing modified-fast diets	Last Chance Diet	Very-low-calorie intake (600 kcal/day) which uses a liquid protein drink, Prolinn.	Rapid weight loss during first few days. Patients like the fact that they do not have to make food choices or think about portion sizes.	Product contains low-quality protein which causes unacceptable danger. Protein-calorie malnutrition, cardiac muscle atrophy, arrythmias, cellular immune deficiency, severe ketosis, gout, hypokalemia, dehydration, vomiting, dizziness, diarrhea, muscle cramps, hypotension, psychological symptoms, alopecia, skin dryness, weakness, and fatigue have been reported.[5] One report of sudden death even though patient was receiving medical supervision.[5] Product is deficient in many nutrients. Monotonous, high attrition rate. Refeeding after use of low-quality liquid protein formulas results in redistribution of nutrients, sodium and water retention, increased catecholamine production, arrythmias, and the possibility of sudden death.	
	Cambridge Diet	Very-low-calorie (330 kcal/day) and very-low-carbohydrate intake promotes rapid loss of water in addition to loss of fat and protein. Consists of a powdered mix which is added to water. Use of Cambridge Diet or any high-quality protein liquid diet should be undertaken only under medical supervision. Periodic biochemical and ECG monitoring is needed.	Patients like the fact that they do not have to make food choices or think about portion sizes. Product is easy to mix. Contains high-quality protein. Rapid weight loss during first few days. May decrease hunger, serum insulin, blood pressure, cholesterol, triglycerides, and serum glucose.	Nitrogen balance may not be attained until the 5th or 6th week of the diet or may not ever be attained in some individuals.[5] Severe protein losses are possible in some people, even though protein is of high quality.[6] Does not educate dieter on proper eating practices. Monotonous, high attrition rate. "Diet counselors" who sell the diet have not had formal nutrition training and may provide misinformation. Many diet participants do not seek medical supervision, as recommended by the company. Total compliance with the plan could result in moderate ketosis and fluid and electrolyte depletion.[5] Constipation, diarrhea in lactose-intolerant people, and alterations in menstrual cycle are common.	Claims that use of such weight-control products is "the answer" to being overweight and will solve future weight-control problems. Claims that if one needs to lose only a few pounds it is OK to use this or a similar product for a few days.

Table 20-1 What the Physician Should Know About Fad Diets (Continued)

DIET CATEGORY	NAME OF DIET	HOW DIET WORKS	ADVANTAGES	POSSIBLE PROBLEMS	FALLACIES
One- or two-food diets	Skim Milk-Banana Diet Steak-Tomato Diet Egg-Wine Diet Fiber Diet Fruit Diet Kempner Rice Diet Zen Macrobiotic Diet Strawberry and Cream Diet Pumpkin-Carrot Diet Hot Dog Diet Egg and Orange Diet	If weight loss occurs, it is probably due to reduced caloric intake as a result of boredom, monotony, and an unpalatable meal plan.	None	Nutritionally incomplete; usually low in protein, vitamins, and minerals. Boring, monotonous diet which does not educate the dieter on proper eating practices. Death by malnutrition if followed long-term. High attrition rate. Health food supplements recommended by some of the diets are expensive.	Claims that refined sugar and refined flour are unhealthy and should be avoided. Actually, these foods may be eaten as long as excessive amounts are not used. Some of these diets suggest that fiber lowers the number of calories one receives from food eaten. Claims that use of a high-fiber supplement will promote early satiety by increasing gastric distention. Claims that certain foods, nutrients, or health food supplements have newly discovered, magical properties which promote weight loss. Promotional materials often suggest that physicians are unaware of or unwilling to use these "breakthroughs." Kempner Rice Diet may be erroneously considered beneficial for the kidneys, blood pressure, and heart function.
Trick Your Body's Metabolism Diets or "Magic Ingredient" diets	Hilton Head Metabolism Diet Starch Blockers Fructose Diet Mannan Human Choronic Gonadatropin (HCG) K-28 Powder I Love NY Diet Fat-Off Diet Grapefruit Diet or Magic Mayo Diet	If weight loss occurs, it is due to reduced calorie intake. Health food supplements have no effect on promoting weight loss other than a short-term placebo effect.	None	Nutritionally incomplete resulting in possible protein, vitamin, and mineral deficiencies. Some are "crash diets." Such diets are usually ineffective. If effective, would be hazardous to health because of nutrient inadequacy, nausea, vomiting, or diarrhea. Attrition rate is high. Does not educate dieter on eating properly for life-long weight maintenance. Any weight lost is usually temporary.	Implies that a particular food combination and/or health food supplement or enzyme will "melt off" or "emulsify" unwanted fat. Frequently uses the meaningless term "cellulite" for unwanted fat. Claims that the diet and/or supplement will inhibit food intake, remove toxic substances from the body and increase the metabolic rate, resulting in large amounts of quick weight loss. Promotional materials often suggest that physicians are unaware of or unwilling to use these "breakthroughs." Claims that grapefruit is a catalyst for burning fat.

Table 20-1 What the Physician Should Know About Fad Diets (Continued)

DIET CATEGORY	NAME OF DIET	HOW DIET WORKS	ADVANTAGES	POSSIBLE PROBLEMS	FALLACIES
	Enzyme Catalyst Diet	Same as above	None	Same as above	Claims that raw fruits, vegetables, seeds, and plant juices provide the dieter with enzymes which trigger mitochondrial function, "melt accumulated fat," and allow fat to be washed out of the body. Actually, any enzymes in foods are digested to amino acids and play no enzymatic role once absorbed.
	Lecithin, B_6, Vinegar, Kelp	Same as above	None	Same as above	Claims that lecithin emulsifies fat, B_6 metabolizes fat, and that vinegar flushes fat out of the body. Claims that vinegar is a good potassium source. Actually, there are only 5 mg of potassium in 1 tsp of vinegar. Claims that iodine in kelp causes the thyroid gland to produce more thyroxin and speed up metabolism.
	Lipogene-GH Diet	Same as above	None	Same as above	Growth hormone dissolves fat and "cellulite" while you sleep. Actually the lipogene-GH tablets are amino acids. The body would have no way of knowing the difference between Lipogene-GH amino acids and those from steak or tofu.
	Body Clock Diet	Same as above	None	Same as above	Claims that people can lose weight while continuing to eat their usual foods if they eat earlier in the day.
	Dolly Parton Diet	Same as above	None	Same as above	Claims that food combinations recommended by this diet require more calories to digest than they actually contain. This is impossible!

Table 20-1 What the Physician Should Know About Fad Diets (Continued)

DIET CATEGORY	NAME OF DIET	HOW DIET WORKS	ADVANTAGES	POSSIBLE PROBLEMS	FALLACIES
	Beverly Hill's Diet	Same as above	None	In addition to the problems listed above, adherence to this diet could result in severe diarrhea, weakness, shock, hypotension, gout, and renal stones. Strenuous exercise could result in hypokalemia, dehydration, and cardiac arrythmias.	Claims that undigested food gets stuck in the body and causes fat to be made. Claims that sesame seeds are a good source of calcium and that fruit requires no digestive enzymes because they contain all enzymes needed for digestion. Claims that being overweight is caused by the combination of foods eaten. This is based on Shelton's 30-year-old food-combining theories. Claims that digestive enzymes for protein and carbohydrate cannot work at the same time, therefore carbohydrate and protein should not be eaten in the same meal. Claims that unlimited intake of french fries will not produce weight gain as long as fresh pineapple is eaten the next day.

Table 20-2 Information Physicians Need to Help Patients Evaluate Weight-Reducing Aids

WEIGHT-REDUCING AID	*CLAIM*	*CRITIQUE*
Weight-reducing candies such as Aydes	If taken before a meal, they curb the appetite by raising the blood sugar and dulling the taste buds.	Those that contain about 25 kcal per candy have little effect on blood sugar levels. Directions often suggest dieters should drink a hot beverage while eating the candy. Any short-term satiety is probably due to the beverage, not the candy. See "Anesthetic-containing diet pills" for comments about benzocaine which is an ingredient in some candies.
Phenylpropanolamine-containing diet pills such as Appedrine, Dexatrim, Dex-a-Diet, Permathene-12, Prolamine, Super Ordinex	Easy weight loss without hunger.	Works as an appetite suppressant for 2 to 3 days; then a tolerance to it develops and it is no longer effective. Rebound appetite may occur once tolerance is established, resulting in greater food intake and weight gain. Such products often contain caffeine. Side effects include hypertension and CNS effects; also may interfere with glucose tolerance in those who have diabetes. Should not be used by people diagnosed with hypertension, thyroid disease, depression, nervousness, or by those who are under age 12, pregnant, or breastfeeding.
Fiber-containing diet pills such as Glucomannan, grapefruit pill, Super Mannan	These products "swell up" inside the stomach and decrease hunger.	The pills are very small; combined with even large amounts of water they could not fill the stomach enough to cause satiety. No scientific evidence supports this claim.
Anesthetic-containing diet pills such as Slim Line (also contains fiber and sugar)	They work by anesthetizing the taste buds and decreasing the flavor of food, helping one eat less.	Usually contain benzocaine or lidocaine, which have no effect on appetite or food consumption.
Sugar-containing diet pills such as Slim Line, Slim Fast	They curb the appetite by raising the blood sugar.	Elevation in blood glucose is usually minimal. If blood glucose is raised significantly, rebound hypoglycemia may occur and stimulate the appetite.

Table 20-3 Information Physicians Can Use to Help Patients Evaluate Diet Programs

PROGRAM	*CRITIQUE*
Diet Center	This program emphasizes quick weight loss. The diet provides approximately 1000 kcal/day and is combined with daily counseling, if desired by the client. People are encouraged to take a Diet Center Supplement four times a day. The supplement contains B-vitamins (at megadose levels), protein, and sugar and is supposed to raise the blood sugar to a level which decreases appetite. No scientific evidence indicates that such a supplement is effective other than to provide a short-term placebo effect. The expense of the supplement is probably not justified. This type of program tends to teach people that weight control is a temporary effort rather than a life-long change in eating habits. This program is more expensive than weekly visits to a registered dietitian for weight-control counseling.
Nutri-System	Clients who follow this program eat Nutri-System's prepackaged meals to control their caloric intake. Food preparation and menu planning are done for clients, thus they do not learn how to make wise food choices. This is a major drawback which "sets the client up" for rebound weight gain once the program is discontinued. Weekly counseling is provided for an additional fee. This program is more expensive than weekly visits to a registered dietitian for weight-control counseling.
Overeaters Anonymous	People who belong to this organization view overeating as an addiction which cannot be cured. Meetings are modeled after Alcoholics Anonymous and may appeal only to those who see themselves as "compulsive eaters." Low-calorie diets may be given to members, but the majority of time is spent discussing ways to control eating behaviors. Members may not learn how to make wise food choices. There is no set fee.
TOPS (Taking Off Pounds Sensibly)	Members of this women's organization attend weekly meetings to receive group support and set weight-loss goals. Quality of group sessions varies depending upon the skills of the leader. People may be "turned off" by weekly weigh-ins which are not kept confidential. Those who do not lose weight may be "put on the spot" and embarrassed. Members frequently admit that they avoid eating and drinking the day prior to a meeting so they lose weight. It is not uncommon for groups to go out for dessert after each meeting to celebrate by overeating! Unfortunately, this approach does not promote change in eating habits.
Weight Watchers, Inc.	This organization offers several diet plans which are based upon the diabetic diet exchange lists. Many health professionals recommend this program. Safe weight loss is encouraged. Members attend weekly meetings to obtain group support, recipes, and weight-loss tips. Weight maintenance diets are provided when weight goals are reached. The company sells a variety of lower calorie foods, cookbooks, and magazines which members may be encouraged to buy. Cost of the program varies depending upon the number of products purchased by the client.

cost, long-range ineffectiveness, and potential harm to health are factors which may help convince the patient.

5. Patience and reinforcement of weight loss during several office visits will probably be necessary.
6. A confrontation with the patient should be avoided if at all possible when trying to change erroneous beliefs.
7. Some patients will be skeptical of professional opinions about fad diets. The public has been led to believe that physicians discredit fad diets because they conspire to withhold "the key" for weight loss. These are the most difficult patients to work with and require more effort before they trust your opinion.[7]

The material in Appendix A may help even the most skeptical of patients to consider the merits and possible problems of fad diets. This handout should be of value to your patients in educating them to decide for themselves whether or not what they read or hear regarding specific nutrition and food claims is or is not valid.

Fad Diets and Adolescent Girls — An Example

Use of fad diets is of particular concern among adolescents. Physicians can be instrumental in guiding adolescent patients away from fad diets toward use of healthful weight-control measures. Development of sound attitudes about the pitfalls of fad diets can benefit adolescents throughout their lives.

As a result of "thin is in" peer pressure, as many as one in three teenage girls is on a "diet." Often, one crash diet after another will be tried as girls search for an easy, magical route to achieve their perceptions of "ideal weight." Fad diets are used by overfat teenagers as well as those who are not significantly overfat but are preoccupied with their body image.

Adolescence is a period of growth and is not the appropriate time for restrictive caloric intake. While it is difficult to objectively determine damage to health caused by teenage fad diets, inadequate intake of nutrients and calories cannot promote optimum development. At least 1600 kcal/day should be eaten by girls who are actively growing and have not yet reached menarche.

For overfat teens, the goal should be to prevent additional weight gain and allow them to "grow into" their weight (for example, a 5'1", 140 pound, 10-year-old can achieve a more desirable level of fatness by maintaining weight at 140 pounds while growing to 5'5" at 14 years of age). Girls who have reached their adult height should eat at least 1200 kcal/day.

Prevention of obesity or overfatness in teens may best be accomplished by regular aerobic exercise rather than diet.[8] This is especially true for children who are so inactive that overfatness occurs even though food intake is normal.[9]

Diet recommendations should be limited to use of lean meats, low-fat dairy products, fruits, vegetables, breads, and cereals. Frequent use of calorie-dense foods (desserts, soda pop, chips, high-fat foods) which provide few vitamins and minerals should be discouraged. Lower calorie alternatives which appeal to teens include sugar-free soda pop, beverages sweetened with aspartame (Nutra-Sweet), frozen pudding bars, frozen gelatin pops, unbuttered popcorn, and angel food cake.

Exercise provides several benefits for weight control. With exercise, food intake may decrease or increase slightly (but usually not enough to offset the energy expenditure of exercise). Metabolic rate increases during exercise and results in greater caloric expenditure. As regular exercise increases the percentage of lean body mass, metabolic rate is elevated. Exercise also may regulate fat cell size and delay or inhibit increases in fat cell numbers during adolescent growth.[10,11] Yet another benefit of exercise is its ability to lower the body's setpoint (the theoretical control mechanism which regulates body weight and fat). The following guidelines may be helpful when recommending an exercise program for adolescents[8]:

- Exercise should be fun, vigorous, and focused on activities that can be easily practiced throughout life so that the habit of regular exercise is developed.
- Frequency and duration of exercise are more important than the speed at which it is done. One-half hour of aerobic exercise done 3-4 times a week (or more often) is desirable.
- Walking, bicycling, and swimming are good exercises for those who are out of condition.
- Group exercises such as aerobic dance may appeal to some. Groups which meet 2-3 times a week for workouts which include flexibility, warm-up, aerobic, and cool-down exercises are effective.

Helping Patients Avoid Nutrition Quackery

It is helpful if the physician understands why patients, including adolescents, believe nutrition misinformation. Once a trusting relationship is established, the physician can reinforce positive behaviors and encourage the patient to select nutrition therapies that are based upon scientific evidence and which can be practiced for a lifetime.

There are several reasons nutrition misinformation is prevalent. Well-meaning people believe they help others when they give testimonials explaining their "success" using "nutritional therapies."

People may be encouraged to self-diagnose and treat "conditions" or potential illnesses. "Diseases" may be invented which explain minor aches, pains, and symptoms. Magical cures often are more reassuring than scientific facts. Justification for use of "nutrition products" may contain a few facts woven together with much nonsense, all of which may sound surprisingly logical.

Some may not recognize that many minor ailments improve with time, regardless of the treatment (or lack of treatment) used. They often assume that "the remedy" caused the cure when actually they would have recuperated without treatment. Lack of understanding of the placebo effect compounds this problem. Some believe, "Just because it didn't work for you doesn't mean that it might not work for me."[12]

Promoters of nutrition misinformation appeal to personal concerns and make every effort to meet customers' needs. The media often perpetuate nutrition fallacies. Media personnel and non-medical persons seldom challenge the credentials of self-proclaimed experts or demand that claims be subject to peer review. Also, when results of scientific studies are reported, these persons may misinterpret, twist, or exaggerate claims.

Patients' beliefs about nutrition and use of nutrition "supplements" are deep-seated and difficult to change. The most effective method is a common-sense approach which takes into account the patient's beliefs about nutrition and dieting.

Once a trusting relationship between patient and physician is established, the physician can encourage attitude change while reinforcing positive behaviors. Confrontation of an undesirable practice may make the patient even more resistant to change. See the section, "Redirecting the Patient to Use Sound Weight-Control Plans" for more ideas, and Appendix A for a useful patient handout.

Evaluating Claims About Nutrition Products

Answers to key questions are useful when evaluating claims made about nutrition products. Claims such as "richest source of a nutrient," "overcomes a deficient diet," "natural and organic," "aids in digestion," "it works for me," or "has no toxic side effects" should be red flags to physicians and patients that the product may not be legitimate.

Advertisements and labels for nutrition supplements and products make claims which often seem quite logical. However, each product should be evaluated according to the following questions to determine if claims are legitimate.

1. *Is the product really a good source of nutrients?*
   Even though a supplement is a rich source of nutrients, it may not contribute significantly to the overall nutriture of a person. Determine how much of the product one would have to take to replace a food source which is rich in the same nutrient. For example, proponents of bee pollen claim it contains more protein than beef, eggs, or cheese. Information obtained from product literature suggests one would have to take approximately eight tablespoons of bee pollen to provide the same amount of protein found in one ounce of cheese. Two tablespoons is the seller's recommended dose per day. This is hardly a significant contribution to protein intake (and is an expensive protein source)!
2. *Are nutrients provided by the product actually deficient in the user's diet?*
   Once an adequate intake has been achieved, additional nutrients are unnecessary and do not participate in their usual functions. For example, excess proteins (amino acids) are burned for energy or stored as fat; vitamins taken in excess will produce a pharmacologic action.
3. *What words are used to describe the product?*
   Many products are labeled "natural" or "organic."

These terms have no real meaning. The human body cannot tell the difference between a natural or synthetic source of a nutrient. Organic products supposedly have been grown in soil which has not been exposed to pesticides and herbicides. There are no laws which govern use of the term "organic," and products labeled as such are often from the same fields as products not labeled "organic." The cost of "organic" products may be 2 to 6 times that of a similar "non-organic" product.

4. *Does the product claim its nutrients are more potent than those from other food sources?*

The body recognizes nutrients by their chemical structure. For example, in general there is only one chemical formula for each vitamin which the body recognizes and can use. It is not possible to create more potent forms of vitamins, minerals, protein, and other nutrients. Product labels which claim "high potency" benefits are meaningless and mislead the consumer. In addition, some products are inactive, although advertisements may say they function as active substances. Some products are even made up of substances which are falsely advertised to be essential to humans. While it is true that there are different forms of some substances (calcium, for example, as calcium phosphate, calcium carbonate, and calcium gluconate) many advertisements do not differentiate between these forms nor indicate they are absorbed to various degrees.

5. *Do claims make sense when compared to mechanisms of human digestion, absorption, and metabolism?*

Many fad products, if they were effective, would have to distort or contradict laws of biochemistry which regulate utilization of food in humans. Literature of one "digestive aid" claims that people should use the product when they overeat to "supplement" the body's digestive secretions. Health professionals know that people produce more digestive enzymes than are needed, even if they have eaten too much. Enzymes taken by mouth are digested (like any protein) and have no enzymatic activity. Such a digestive supplement would be of no use.

6. *What kind of evidence is propagated to justify use of fad products?*

Fad products usually rely on anecdotal information, testimonials, and uncontrolled studies to support use of the products. Some companies include impressive reference lists with citations from respected professional journals in their product literature. Unfortunately, many of these studies have been taken out of context or have been used to make premature conclusions from insufficient data.

7. *What is the potential for harm?*

Undesirable effects from use of fad products vary. Some products cause no physical problems, but they may encourage self-diagnosis and treatment of known medical problems. Other products cause significant side effects. For example, lecithin (used by maturing adults to improve memory) can cause gastrointestinal distress, dizziness, anorexia, depression, and other symptoms. Potential for provoking such side effects underscores the importance of asking questions about use of nutritional supplements and products when interviewing patients.

Table 20-4, Nutritional Supplements — Fact or Fiction, includes information which will help you evaluate several popular nutrition supplements.

Little Known Dangers of Herbal Teas

The physician should be familiar with the potential dangers of herbal teas. There are no regulations which ban the sale of potentially dangerous herbal products. Physicians should advise patients to avoid herbal teas unless ingredients are listed, and to drink only those which are safe.

Popularity of some herbal teas should be cause for concern among health professionals. Health food stores and some supermarkets sell a wide variety of herbs and herbal teas, including some which can be dangerous or cause undesirable side-effects. Unfortunately, the public believes that all herbal teas are wholesome. Actually, there are no regulations which ban the sale of potentially dangerous herbal products.

Companies are not required to list herbal tea ingredients, and many do not. There are no standards of quality, and various samples of the same herb mixture may contain different quantities of ingredients. The best advice a physician can offer is to suggest patients buy only those herbal products which list all ingredients. People should avoid products which contain herbs listed in the patient handout (Appendix B).

The literature reports several cases of illness resulting from use of herbal tea. One 65-year-old man developed reversible agranulocytosis after taking a Chinese herbal tea "cure" for arthritis. When the tea was analyzed it contained phenylbutazone, phenacetin, aminopyrine, and mercuric sulfide.[25] A young woman developed ir-

Table 20-4 Nutrition Supplements — Fact or Fiction

PRODUCT	*CLAIMS*	*FACTS*	*CONCERNS*
Alfalfa powder or tablets[13]	Contains the proper balance of nutrients. Contains natural estrogens which cure circulatory problems. Relieves symptoms of diabetes and arthritis.	Greatly overpriced. The same nutrients are found in less expensive foods. May produce a hypocholesterolemic effect due to saponins which reduce intestinal absorption of cholesterol; additional research is needed in this area. No scientific evidence supports use for diabetes or arthritis.	Encourages self-diagnosis and treatment of medical problems. No long-term studies are available on toxicity of alfalfa in humans.
Bee pollen[14]	The only "perfect food." Provides youth, health, and vitality. Provides energy for athletes. Contains all essential nutrients. A general "cure all."	Greatly overpriced. The same nutrients are found in less expensive foods. No scientific studies support claims that its use relieves illness, provides special health benefits, or enhances athletic performance. All evidence is anecdotal.	May trigger gout or renal stones (due to nucleic acid content) in susceptible persons. Allergen potential can trigger systemic reactions or anaphylactic shock.
Bone meal powder or tablets[13]	Prevents bone fractures.	Contains greater than 1000 mg calcium per teaspoon. Made from ground bones of inspected, slaughtered animals.	May contain arsenic and lead. Content of bone meal is variable, depending on diet and environment of animals.
Brewer's yeast[13]	A "health" food.	Provides B-complex vitamins, nucleic acids, selenium, and chromium. Chromium is present in the organic form. May improve glucose tolerance and lower serum cholesterol; additional research is needed in this area.	May trigger gout or renal stones (due to nucleic acid content) in susceptible persons.
Carob powder[13]	A healthier alternative to chocolate. A "diet" food.	A substitute for cocoa. Does not contain the stimulant, theobromine, found in cocoa. It is higher in calories than cocoa.	People may assume that a food made with carob is a low-calorie food.
Cranberry juice[13]	Reduces risk of urinary tract infection.	In theory, it contains a precursor of hippuric acid which is a strong anti-bacterial agent in urine. Actually, effective levels of hippuric acid cannot be achieved. In palatable quantities, it does not consistently lower and sustain urinary pH.	Unpalatable and high in calories if used in large quantities.

Table 20-4 Nutrition Supplements — Fact or Fiction (Continued)

PRODUCT	CLAIMS	FACTS	CONCERNS
DHEA (dehydroepi-androsterone)[15]	Enhances sex life. Promotes longevity. Helps with weight loss. Prevents cancer and heart disease. Cures diabetes.	A precursor of sex hormones made by the human body. DHEA prevents obesity and promotes weight loss in rats. Prevents the development of certain cancers in mice. Helps control diabetes in mice. May be useful as a drug someday but more research is needed. No research shows that DHEA has the same effects on humans as it does on rats and mice. Supplements usually contain insignificant levels of DHEA. Most products do not have the actual content of DHEA listed.	Has not been systematically tested in humans. Can alter levels of sex hormones. Has toxic side effects. Supplements which contain high levels of DHEA may be dangerous for pregnant women. Long-term effects are unknown.
Digestive aids	Supplements the body's secretions. Aids in the utilization of food. Relieves digestive distress. Needed when one overeats or when rumbling and flatulence occur one hour after eating (indicates food is not being digested properly). Prevents proteins from putrefying in the intestine, starches from fermenting, and toxin production.	Contains pancreatic enzymes, pepsin, bile, and/or hydrochloric acid. Most people do not need such a supplement since the body produces more than is needed. In cases of malabsorption due to pancreatic enzyme deficiency, more appropriate prescription supplements are available. Rumbling and flatulence do not indicate that food is being improperly digested. Few people have difficulty digesting protein and starch. Toxins are not formed from these nutrients.	Encourages self-diagnosis and treatment of medical problems.
Dried cruciferous vegetables with beta-carotene	Decreases risk of cancer by inhibiting carcinogens. Those who have poor eating habits or do not like vegetables should take this supplement.	Contains dried cabbage, broccoli, cauliflower, brussels sprouts, and beta-carotene. An expensive source of these vegetables. Based on the National Academy of Sciences' report, "Diet, Nutrition and Cancer," cause and effect relationships between food and cancer are impossible to establish. If this minimizes risk, the quantity needed to do so is unknown.	Implies that everyone should take these tablets to prevent cancer.
Fructose[2,13,16]	Promotes weight loss. Natural replacement for sugar. Should be used instead of sugar in the diet for diabetes.	Does not improve blood glucose levels in diabetes when blood sugars are poorly controlled or when obesity is present. Provides a flatter blood glucose response than sucrose when used in controlled diabetes. No scientific evidence to support the role of fructose as a weight-reduction aid.	It is not calorie-free. Many "dietetic" foods made with fructose contain as many calories as similar products made with sucrose. The public assumes incorrectly that they are low-calorie foods. A large dose (70-100 gms) can cause abdominal pain, diarrhea, and increased serum uric acid levels.

Table 20-4 Nutrition Supplements — Fact or Fiction (Continued)

PRODUCT	*CLAIMS*	*FACTS*	*CONCERNS*
Gerovital H-3[14]	Effective against arthritis, atherosclerosis, angina, deafness, neuritis, Parkinson's disease, depression, Alzheimer's disease, senility, and impotence. Stimulates hair growth. Re-pigments gray hair.	Many uncontrolled studies have been done, but double-blind, controlled studies do not show improvement in mental or physical status of the elderly.	Sensitivity reactions to the ingredient, procaine, may occur.
Ginseng[13,14]	A tonic for digestive troubles; a stimulant and aphrodisiac. Increases resistance to infection and disease. Protects against air pollution and radiation. Increases stamina, relieves stress, lengthens life, normalizes blood sugar, and lowers blood cholesterol. No side effects.	All evidence is anecdotal. Much is unknown about the herb, its harmful effects, and its interactions with other substances. Is not on FDA's list of "generally recognized as safe" ingredients.	Ginseng Abuse Syndrome is possible. As little as 3 grams result in hypertension, insomnia, nervousness, feelings of depersonalization, confusion, depression, skin eruptions, edema, and diarrhea. Abrupt withdrawl may result in hypotensive crisis. May have an estrogen-like effect on the vaginal mucosa, producing vaginal bleeding; can also cause mastalgia with diffuse mammary nodules in post-menopausal women.
Glucomannan[16]	Used by the Japanese to promote weight control. Decreases food absorption by stimulating transport through the gastrointestinal tract.	An extract from the konjac root. No scientific studies document its effectiveness. All information is anecdotal.	An expensive weight-loss gimmick which results in frustration when failure to lose weight occurs. If it works, it would cause severe diarrhea.
Herbal preparations[14]	A general "cure all." Combinations of certain herbs are more effective than single herbs.	Quality control is poor and products may be contaminated with weeds and other agents. Many products are labeled incorrectly. No scientific evidence supports the claim that some herbs are synergistic.	May contain agents which cause allergic reactions and cardiovascular toxicity. May contain stimulants, carcinogens, teratogens, and poisons. Chinese herbal products have been found to contain lead and arsenic. Should not be used during pregnancy. (See Patient Handout, Appendix B.)

Table 20-4 Nutrition Supplements — Fact or Fiction (Continued)

PRODUCT	CLAIMS	FACTS	CONCERNS
Honey[13,16]	It is more nutritious than sugar. It is a natural sugar which provides quick energy. It should be used instead of sugar in the diet for diabetes.	Contains a mixture of glucose and fructose with only traces of other nutrients. Although honey has more vitamins and minerals than table sugar, these quantities are not nutritionally significant in the amounts usually eaten. No scientific evidence supports the claim that it is a quicker energy food than other carbohydrates.	Diabetics who ingest honey are, essentially, consuming sugar, which may result in poor blood-sugar control. Infants under one year of age are susceptible to botulism if fed honey.
Lactobacillus acidophilus tablets and powder[13,14]	Maintains a good "balance" of bacteria in the intestine. Inhibits toxin-producing bacteria in the colon. Used for "detoxification." Maximizes food absorption. Is a "natural" antibiotic. Sweetens the breath. Stimulates the immune system. Can be digested by lactose-intolerant people.	No in-vivo research in animals or man has been conducted. In theory, the Lactobacillus bacteria create an acid environment in the bowel by producing lactic acid from lactose. Some bacteria cannot live in an acid environment. Effectiveness is questionable. If taken without milk products the Lactobacillus bacteria may not survive. Sweet acidophilus milk may be useful for lactose-intolerant people. A more economical alternative is Lact-Aid, a powdered lactase enzyme.	May decrease the metabolic activity of fecal microflora, associated with a higher incidence of bowel cancer.
Lecithin and choline[13,16]	Cures or prevents arthritis, gallstones, heart disease, nervous disorders, and skin problems. Improves memory. Lowers blood cholesterol. Aids the digestion and absorption of fat. Promotes weight loss.	Widespread in the food supply and can be made by the body. Supplements are not needed and become merely an additional energy source. Commercial lecithin contains only 20-30% lecithin. It is an FDA-approved food additive used as a stabilizer and emulsifier. No scientific evidence exists that lecithin supplements promote weight loss. Humans may be unable to absorb intact lecithin, explaining why it appears to be of no benefit when taken orally. Lecithin may increase levels of high-density lipoproteins.[17] Use of lecithin may improve tardive dyskinesis and Huntington's Chorea.[18]	Can produce acute gastrointestinal distress, diarrhea, sweating, salivation, dizziness, anorexia, depression, supersensitivity of dopamine receptors, a fish-like body odor, and disturbance of the choline-dopamine-serotonin balance.

Table 20-4 Nutrition Supplements — Fact or Fiction (Continued)

PRODUCT	*CLAIMS*	*FACTS*	*CONCERNS*
Liver tablets	An excellent source of vitamins and iron. Helps build red blood cells.	Contains dried liver. An expensive source of vitamins and iron. For example, it takes as many as 10 tablets to provide the nutrition value of one ounce of fresh liver.	Encourages self-diagnosis and treatment of medical problems.
Protein powders, liquids[16] and tablets[16]	The more protein eaten, the more nutritious the diet. Protein improves physical performance, promotes weight loss, and is not fattening. Certain amino acids taken in tablet form control pain.	Products may be of high or low quality (in terms of amino acid content). Once the body's protein needs are met, additional protein is of no value in building muscles, improving performance, or promoting weight loss. Excess protein is converted to fat. An excessive intake of protein can contribute to weight gain. No amino acid, taken alone or in combination, provides curative powers or pain relief.	Excessive protein intake can result in dehydration and increased loss of calcium which can trigger gout or renal stones in susceptible persons.
Seaweed (Kelp)[13] (Also see Spirulina)	Contains large quantities of high-quality protein as well as many other nutrients. Cures constipation and mucous colitis; prevents atherosclerotic heart disease. Promotes weight loss. Protects against radiation sickness. A "natural" source of iodine.	Most seaweeds are not good sources of protein. Names of seaweeds include agar-agar, algae, carrageenan, dulse, Iceland moss, Irish moss, kelp, laver, rockweed, and sea lettuce. Claims for curative properties of seaweed have not been substantiated by scientific studies. The human body cannot distinguish between "natural" iodine and other sources of iodine.	Taken in excessive amounts can result in iodine toxicity.
Spirulina[13,14]	Promotes weight loss by decreasing appetite; a "natural" diet pill. Contains vitamins which are more potent than other sources of vitamins. Cures hypoglycemia, hay-fever, diabetes, anemia, liver disease, and ulcers. Provides quick energy. Contains all nutrients needed to support human life. A good source of vitamin B_{12}.	Contains good quality protein, but is greatly overpriced. Few people can afford to eat nutritionally significant amounts. (The amount of protein in $0.70 worth of peanuts would cost $10-23 if purchased as spirulina). Most of the vitamin B_{12} is in an analog form which has no vitamin activity in man. No scientific evidence exists to suggest that it is useful for treatment of any condition other than that it may have a hypocholesterolemic effect.[19] Safe consumption has not been adequately tested. Does not provide quick energy. One vitamin source is not more potent than another vitamin source.	Advertisements may not indicate the source of the product; some sources are toxic, resulting in nausea, vomiting, and anorexia. Some may also trigger gout or renal stones (due to nucleic acid content) in susceptible persons. Vitamin B_{12} analogs may be harmful.

Table 20-4 Nutrition Supplements — Fact or Fiction (Continued)

PRODUCT	*CLAIMS*	*FACTS*	*CONCERNS*
Starch blockers	Promotes weight loss by inhibiting the enzyme which digests carbohydrate. Encourages unlimited intake of starch.	Now classified as a drug by FDA and banned from sale. Scientific studies show that starch blockers do not reduce absorption of carbohydrate if taken prior to meals.[20] Conflicting evidence exists regarding the effectiveness of starch blockers taken during meals.[20,21] Starch blockers may not work in vivo because: (a) pre-incubation of the enzyme inhibitor with amylase is not possible;[22] (b) the pancreas secretes much more amylase than is needed for digestion of starch;[20] (c) gastric acid may inactivate the starch blocker;[23] and (d) starch may be hydrolyzed by an alternative route which is not affected by the starch blocker.[24]	Side effects may include nausea, vomiting, diarrhea, stomach pain, and flatulence. At least 30 hospitalizations have resulted from use of starch blockers.
Superoxide Dismutase (SOD)[13,16]	Reverses aging and degeneration. Prevents cancer. Lessens the effects of air pollution.	SOD is an enzyme found in cells of all oxygen breathing animals. It protects cells from free radicals that damage DNA. Scientists do not understand the complete picture and claims for its use are premature. Parenteral use of certain forms of SOD looks promising, but more research is needed.	Potential side effects are unknown.

regular menstrual bleeding due to reduced serum clotting factors. The cause was linked to heavy intake of an herbal tea which contained natural coumarins. While several other factors could have contributed to her problem, use of the tea probably had a major effect.[26]

Use of herbal teas in the clear liquid diet for management of acute diarrhea should be discouraged since several herbs can aggravate diarrhea. Patients with perplexing symptoms should be questioned about their consumption of herbal teas. If heavy usage has occurred, it may be of value to have the product analyzed to determine the presence of pharmacologic substances which could trigger the problems. Table 20-5 includes a summary of some pharmacologic effects caused by herbs.

Summary

Use of fad diets and nutrition supplements can be harmful to health and, at the very least, in many cases, they are a waste of money. Americans spend millions of dollars each year on the false belief that they are attaining a higher degree of health by use of such diets and products. Physicians can be influential in helping patients make wise decisions when they are confronted with nutrition claims. The prosperity of nutrition quackery can be reduced significantly if consumers, through their physicians, learn how to better evaluate diet and nutrition products.

Table 20-5 Pharmacologic Actions of Commonly Used Herbs

HERBS AND PHARMACOLOGIC ACTIONS	*ADDITIONAL TOXIC EFFECTS*
Abortifacients Claw's root Devil's root Pennyroyal	Can induce spontaneous abortion in pregnant women.
Allergenic Agents Chamomile Goldenrod Marigold St. John's Wort Yarrow	Chamomile may trigger rhinitis, skin reactions, or anaphylactic shock in persons allergic to ragweed, asters, chrysanthemums, or other members of this plant family. Persons allergic to chamomile should avoid all herbs listed in this category. St. John's Wort may trigger delayed hypersensitivity reactions.
Anti-cholinergic Agents Burdock root and seeds Catnip Horsetail Hydrangia Jimson weed Juniper Lobelia Shave grass Wormwood	Burdock produces severe symptoms with as little as 1/2 cup of tea. Shave grass and Horsetail contain nicotine and thiaminase. When eaten by animals, bizarre CNS symptoms and a syndrome similar to beribori have resulted. Acute neurotoxicity.
Carcinogens Sassafrass	Sassafrass contains safrol, a potent carcinogen, banned from use in food by the FDA.
Cardiovascular Toxicity Ginseng Licorice root	Ginseng can cause hypertension and edema. Large amounts of licorice can cause edema, hypokalemia, hypertension, and congestive heart failure.
Cathartics Aloe leaves Buckthorn bark Dock root Ginseng Senna	These herbs can cause severe diarrhea. Use of senna has resulted in death in Africa.
Coumarins Melilot Tonka beans Woodruff	Contain natural coumarins which can interfere with normal blood-clotting mechanisms.
Diuretics Buchu Dandelion Juniper Quack grass	Buchu, quack grass, and dandelion produce a mild diuretic effect and are considered harmless. Juniper is a diuretic which can irritate the GI tract.
Estrogen Activity Ginseng	Ginseng may cause swollen and painful breasts. Mandrake is often sold as ginseng and contains a hallucinogen. Reserpine is also sold as ginseng and can lower blood pressure.
Hepatotoxins Comfrey Sassafrass	Comfrey contains several substances that are potentially toxic to the liver. Side effects take several years to appear. Habitual use of comfrey tea, especially if made from the root, has potential for serious health hazard and should be discouraged.[29] Sassafrass inhibits certain liver microsomal enzymes. Secondary toxicity could develop if drugs usually metabolized by these enzymes are given.[30]
Toxins Foxglove Indian tobacco Inkberry Mistletoe Pennyroyal Pokeweed	Foxglove and pokeweed can cause death. Indian tobacco contains a CNS stimulant and can cause sweating, vomiting, paralysis, hypothermia, coma, and death. Inkberry can cause gastroenteritis, diminished respiration, and death, especially in children. Mistletoe can cause gastroenteritis.

Many herbal teas are rich in tannins which can bind, inactivate, or delay absorption of nutrients and certain drugs. Excessive use of any herbal tea should be discouraged.

For additional information: Tyler, V.L. *The Honest Herbal. A Sensible Guide to the Use of Herbs and Related Remedies.* Philadelphia: George F. Stickley Co., 1982.

Evaluation

To become a patient advocate in the area of nutrition products and fad diets requires that you be familiar with the environment in which patients are making nutritional decisions. To raise your level of awareness of your patient's "nutrition environment," do the following exercises, then discuss them with fellow residents, faculty, and available nutrition specialists.

1. Get to know your surroundings. Check the yellow pages of your phone directory for the presence of health food centers and diet and weight-loss clinics in your area. Visit some of these centers and clinics. Remember, if a center or clinic is in your practice area, it means there is a market for its services. Also visit supermarkets in your area. Many supermarkets now contain diet and health food sections. As you visit these centers, clinics, and stores, ask the following questions:
   A. What types of claims are being made for products and services offered?
   B. Are the services and/or products being offered of value?
   C. Are the services and/or products being offered priced appropriately?
   D. Would you, in general, classify the environment in which your patients live as one which encourages nutrition faddism?
2. Visit your local bookstores, magazine stands, and supermarkets. Buy and read some of the "diet" books being promoted. Look for references to diets in popular magazines. Assess the quality and quantity of nutrition information available to your patients via the popular media.
3. Prepare a display for your office waiting room, presenting your own set of nutrition do's and don'ts. Include a recommended diet book and diet article list and other information which may be used in patient education.

References

1. Bennett, W., and Gwin, J.: *The Dieter's Dilemma.* New York: Basic Books, 1982.
2. Tice, L.: "Affirmations and Visualizations," in *Investment in Excellence.* Seattle, WA: The Pacific Institute, Inc., 1983.
3. "Guide to Good Eating — A Recommended Daily Pattern," 4th ed. Rosemont, IL: National Dairy Council, 1977.
4. Newmark, S.R., and Williamson, B.: "Survey of Very Low-Calorie Weight Reduction Diets. I. Novelty Diets." *Archives of Internal Medicine,* 143:1195-98, 1983.
5. Newmark, S.R., and Williamson, B.: "Survey of Very Low-Calorie Weight Reduction Diets. II. Total Fasting, Protein-Sparing Modified Fasts, Chemically Defined Diets," *Archives of Internal Medicine,* 143:1423-27, 1983.
6. Fisler, J.S., et al.: "Nitrogen Economy During Very-Low-Calorie Reducing Diets: Quality and Quantity of Dietary Protein." *American Journal of Clinical Nutrition,* 35:471-486, 1982.
7. Jarvis, W.T.: "Coping with Food Faddism." *Nutrition and the M.D.,* 6(10):1-2, 1980.
8. Hoerr, S.L.: "Exercise: An Alternative to Fad Diets for Adolescent Girls." *The Physician and Sports Medicine,* 12(2):76-83, 1984.
9. Coates, T., et al.: "Parent Participation in a Treatment Program for Overweight Adolescents." *International Journal of Eating Disorders,* 1(April):37-48, 1982.

10. Oscai, L.B., et al.: "Effect of Exercise on Adipose Tissue Cellularity." *Federation Proceedings*, 33(August):1956-58, 1974.

11. Oscai, L.: "Role of Exercise in Weight Control," in *Exercise and Sport Science Reviews*, Wilmore, J., (ed.), Volume 1. New York: Academic Press, 1973.

12. Barrett, S. (ed.): *The Health Robbers*, 2nd ed. Philadelphia: George F. Stickley Co., 1980.

13. Worthington-Roberts, B., and Breskin, M.: "Fads or Facts? A Pharmacist's Guide to Controversial 'Nutrition' Products." *American Pharmacist*, NS23 (8):30-42, 1983.

14. Dubick, M.A.: "Dietary Supplements and Health Aids — A Critical Evaluation. Part 3 — Natural and Miscellaneous Products." *Journal of Nutrition Education*, 15(4):123-29, 1983.

15. _____: "Unfounded Claims for DHEA Supplements." *Tufts University Diet and Nutrition Letter*, 2(12):1, 1985.

16. Dubick, M.A.: "Dietary Supplements and Health Aids — A Critical Evaluation. Part 2 — Macronutrients and Fiber." *Journal of Nutrition Education*, 15(3):88-93, 1983.

17. Childs, M.T., et al.: "The Contrasting Effects of a Dietary Soya Lecithin Product and Corn Oil on Lipoprotein Lipids in Normolipidemic and Familial Hypercholesterolemic Subjects." *Atherosclerosis*, 38:217, 1981.

18. Fernstrom, M.H.: "Lecithin, Choline, and Cholinergic Transmissions," in *Nutritional Pharmacology*, Spiller, G.A. (ed.). New York: Alan R. Liss, 1981.

19. Wang, C., et al.: "Effect of Chlorella on the Level of Serum Cholesterol." *Journal of the Formosan Medical Association*, 80:929-933, 1981.

20. Bo-Linn, G.W., et al.: "Starch Blockers — Their Effect on Calorie Absorption from a High-Starch Meal." *New England Journal of Medicine*, 307(23):1413-16, 1982.

21. Meyer, B.H., et al.: "Inhibition of Starch Absorption by Alpha-Amylase Inactivator Given with Food." *Lancet*, 1 (April 23): 934, 1983.

22. Rosenberg, I.H.: "Starch Blockers — Still No Calorie Free Lunch." *New England Journal of Medicine*, 307(23):1444-45, 1982.

23. Carlson, G.L., et al.: "A Bean Alpha-Amylase Inhibitor Formulation Is Ineffective in Man." *Science*, 219:393-95, 1983.

24. Hollenbeck, C.B., et al.: "Effects of a Commercial Starch Blocker Preparation on Carbohydrate Digestion and Absorption: in vivo and in vitro Studies." *American Journal of Clinical Nutrition*, 38:498-503, 1983.

25. Brooks, P.M., and Lowenthal, R.M.: "Chinese Herbal Arthritis Cure and Agranulocytosis." *Medical Journal of Australia*, 2:860, 1977.

26. Hogan, R.P.: "Hemorrhagic Diathesis Caused by Drinking an Herbal Tea." *Journal of the American Medical Association*, 249:2679, 1983.

27. Abramowitz, M. (ed.): "Toxic Reactions to Plant Products Sold in Health Food Stores." *The Medical Letter*, 21:29, 1979.

28. Anon.: "What's Brewing with Herbal Teas?" *SNE Communicator Newsletter*, 15(1):3-4.

29. Greveson, G., et al.: "Long-term Thiazide Diuretics." *Lancet*, 1:941, 1981.
30. Segelman, A.B., et al.: "Sassafras and Herb Tea." *Journal of the American Medical Association*, 236:477, 1976.

Resources for Physicians

1. Barrett, S. (ed.): *The Health Robbers*, 2nd ed. Philadelphia: George F. Stickley Co., 1980.
2. Herbert, V., and Barrett, S.: *Vitamins and "Health" Foods: The Great American Hustle*. Philadelphia: George F. Stickley Co., 1981.
3. Tyler, V.L.: *The Honest Herbal: A Sensible Guide to the Use of Herbs and Related Remedies*. Philadelphia: George F. Stickley Co., 1982.
4. *The Harvard Medical School Health Letter*. Department of Continuing Education, Harvard Medical School, 25 Shattuck St., Boston, MA 02115.
5. *Tufts University Diet and Nutrition Letter*, 322 W. 57th St., Box 2465, Boulder, CO 80322.
6. *Nutriton and the M.D.* PM, Inc., 14349 Victory Blvd., #204, Van Nuys, CA 91401.

Resources for Patients

1. Barrett, S. (ed.).: *The Health Robbers*, 2nd ed. Philadelphia: George F. Stickley Co., 1980. Helps the reader to identify nutrition quackery and avoid wasted money on worthless "nutrition" products.
2. Chicago Nutrition Association: *Nutrition References and Book Reviews*, 5th ed. Chicago, 1981.
   A guide to nutrition books which indicates those that are recommended, recommended with reservations, and not recommended.
3. Consumers Union: *Health Quackery*. Orangeburg, NY: Consumer Reports Books, 1980.
   Includes discussion on arthritis and weight reduction quackery, as well as mail-order frauds and other topics.
4. Deutsch, R. *The New Nuts Among the Berries*. Bull Publishing Co., P.O. Box 208, Palo Alto, CA 94302, 1977.
   An amusing, factual account of how nutrition nonsense captured America.
5. *Environmental Nutrition*. Newsletter issued monthly by Environmental Nutrition, Inc., 53 Riverside Drive, Suite 15-A, New York, NY 10024.
   Contains timely, sound articles about topics related to nutrition.
6. Herbert, V., and Barrett, S.: *Vitamins and "Health" Foods: The Great American Hustle*. Philadelphia: George F. Stickley Co., 1981.
   Helps the reader learn to identify nutrition quackery and avoid wasted money on worthless "nutrition" products.
7. *Nutrition Today* magazine. Issued bi-monthly by the Nutrition Today Society, P.O. Box 1829, Annapolis, MD 21404.
   Contains timely nutrition articles by respected health professionals.
8. Stare, F.J., and Whelan, E.M.: *Eat OK — Feel OK: Food Facts for Your Health*. N. Quincy, MA: The Christopher Publishing House, 1978.

9. Stare, F.J., and McWilliams, M.: *Nutrition for Good Health, Eating Less and Living Longer.* Philadelphia: George F. Stickley Co., 1982.
   Uses a question and answer format to present information about weight control and the folly of food fads in addition to other topics.
10. Stare, F., and Aronson, V.: *Your Basic Guide to Nutrition.* Philadelphia: George F. Stickley Co., 1983.
    Uses a question and answer format to present information about teenage nutrition problems, realistic weight control, "natural" and "organic" foods, "how to spot a nutrition quack," and "where to get reliable advice."
11. Stare, F.J.: *Dear Dr. Stare: What Should I Eat? A Guide to Sensible Nutrition.* Philadelphia: George F. Stickley Co., 1982.
    Guides the reader through a maze of health and nutrition information.
12. Tyler, V.L.: *The Honest Herbal. A Sensible Guide to the Use of Herbs and Related Remedies.* Philadelphia: George F. Stickley Co., 1982.
    Uses scientific documentation to support or dismiss herbalist's claims in clear, non-technical language. Helps the reader decide whether an herb is potentially useful, of no value, or potentially hazardous.
13. *Tufts University Diet and Nutrition Letter.* Newsletter issued monthly by Tufts University Diet and Nutrition Letter, 322 West 57th St., Box 2465, Boulder, CO 80322.
    Contains timely, sound articles about topics related to nutrition.
14. Popular magazines are often a source of nutrition information for the public. The American Council on Science and Health scored many magazines on the reliability of their articles on nutrition.

Following are the results (1982):

Magazine	*Accuracy on Nutrition*
50 Plus	100%
Parents	97%
Redbook	97%
Reader's Digest	95%
Good Housekeeping	93%
Glamour	80%
Vogue	79%
Woman's Day	74%
Ms	73%
Seventeen	71%
Family Circle	59%
McCall's	57%
Ladies' Home Journal	50%
Mademoiselle	46%
Cosmopolitan	37%
Harper's Bazaar	29%
Organic Gardening	25%
Prevention	10%

A similar study conducted in 1984 confirmed the above findings and also included other popular magazines. American Health. Self, and Consumer's Research were rated as providing excellent nutrition information with extensive nutrition coverage.

Appendix A

PATIENT HANDOUT

How to Avoid Costly Nutrition Quackery "Rip-Offs"

Every American is in some way affected by nutrition quackery. Newspaper ads, magazines, and books promote claims that manipulation of the diet and use of "supplements" will improve health. Nutrition claims are often misleading. Many "supplements" and "diets" are of little or no value and may even be harmful. People need to ask questions before they select a nutrition product or diet. The following questions will help you make wise decisions.

1. Is the evidence based upon a story (personal experience) rather than on scientific studies?
2. Has it been proven safe? Don't assume that all nutrition supplements, herbs, and diets are safe.
3. What is the motive of the promoter? If profit is the only motive, "Watch Out!"
4. What kind of claims are made? Are they vague and misleading? Are they based upon testimonials and case histories? The quack's position is "Prove I'm wrong" instead of "Here is scientific proof that I'm right."
5. Do experts in the field use it? Would an expert encourage a relative to use the product or diet?
6. Does your doctor think the claim makes sense?
7. Does it claim that a nutrient, food group, or supplement is the "key" to rapid weight loss? Does it blame certain foods for causing problems? If so, then look elsewhere.
8. Is it a revolutionary idea? This trick has been used for years to mislead the public.
9. Does it claim 100% success? No product or diet which is sound will do so.
10. Do promoters claim persecution by the medical profession? This is used as a sympathy-getting tactic and should immediately tip off the consumer that "something is fishy."

References

1. "How to evaluate medical information," *The Harvard Medical School Health Letter*, 3:6, 1978.
2. Vickery, D.M., and Fries, J.F.: *Take Care of Yourself: A Consumer's Guide to Medical Care.* Reading, MA: Addison-Wesley Publishing Co., 1976.
3. Barrett, S. (ed.): *The Health Robbers*, 2nd edition. Philadelphia: George F. Stickley Co., 1980.

Little Known Dangers of Herbal Teas

Herbal teas are a blend of herbs, spices, and aromatic ingredients such as flower buds and citrus peel. They have gained widespread acceptance as caffeine-free alternatives to coffee and tea. Herbal teas blended with matte or black tea, however, are not caffeine-free.

Unfortunately, there are no regulations which ban the sale of herbal teas that are potentially dangerous. Companies are not required to list herbal tea ingredients, and many do not. There are no standards of quality, and various samples of the same herb mixture may contain different quantities of ingredients.

"Natural" products such as herbal teas can contain harmful substances which act like drugs when consumed. While some herbal teas are harmless, those which contain the following herbs should not be used.

Herb	*Problem*
Aloe leaves	Can cause severe diarrhea.
Buckthorn bark	Can cause severe diarrhea.
Burdock root and seeds	Can affect the nervous system and cause anxiety, delirium, disorientation, and seizures.
Catnip	Can affect the nervous system.
Chamomile	Can cause inflammation of the nose and skin reactions in those who are allergic to ragweed, asters, chrysanthemums, or other members of this plant family; in severe cases, can result in life-threatening anaphylactic shock.
Claw's root	Can induce spontaneous abortion in pregnant women.
Comfrey	Can damage the liver and cause serious health problems; side effects take several years to occur.
Devil's root	Can induce spontaneous abortion in pregnant women.
Dock root	Can cause severe diarrhea.
Foxglove	Poisonous.
Ginseng	Can cause high blood pressure, edema, insomnia, nervousness, confusion, depression, skin eruptions, and diarrhea, in addition to other side effects.
Goldenrod	Can trigger allergic reactions in those allergic to this plant.
Horsetail	Can cause bizarre central nervous system symptoms and a syndrome similar to one caused by thiamin deficiency.
Hydrangea	Can affect the nervous system.
Indian tobacco	Can cause sweating, vomiting, paralysis, hypothermia, coma, and death.
Inkberry	Poisonous; can cause inflammation of the stomach, decreased respirations, and death (especially in children).
Jimson weed	Can affect the nervous system.
Juniper	Can cause increased urination and irritate the stomach and intestine; also can affect the nervous system.
Licorice root	Can cause water retention, low levels of potassium in the blood, high blood pressure, and congestive heart failure.
Lobelia	Can affect the nervous system.
Mandrake	Often sold as ginseng; can cause hallucinations.
Marigold	Causes same problems as chamomile.
Melilot	Can interfere with normal clotting of the blood.
Mistletoe	Poisonous; can cause inflammation of the stomach.
Pennyroyal	Can induce spontaneous abortion in pregnant women.
Pokeweed	Poisonous.
Reserpine	Often sold as ginseng; can cause low blood pressure.
Sassafrass	Contains a potent carcinogen, safrol.
Senna leaves	Can cause severe diarrhea.
Shave grass	Causes symptoms similar to those of horsetail.
St. John's Wort	Causes same problems as chamomile.
Tonka beans	Can interfere with normal clotting of the blood.
Woodruff	Can interfere with normal clotting of the blood.

Wormwood	Can affect the nervous system.
Yarrow	Causes same problems as chamomile.

Many herbal teas are rich in tannins which can bind, inactivate, or delay absorption of nutrients and certain drugs. Excessive use of any herbal tea is not wise.

For additional information: Tyler, V.L.: *The Honest Herbal. A Sensible Guide to the Use of Herbs and Related Remedies.* Philadelphia: George F. Stickley Co., 1982.

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Some Abbreviations Used in the Nutrition in Primary Care Series

ATP	adenosine triphosphate
c	cup
cc	cubic centimeter
CNS	central nervous system
FDA	Food and Drug Administration
gm	gram
IBW	ideal body weight
IU	International Units
kcal	kilocalorie
kg	kilogram
lb	pound
lg	large
MCV	mean corpuscular volume
MDR	minimum daily requirement
med	medium
μg	microgram
mEq	milliequivalent
mg	milligram
MJ	megajoule
ml	milliliter
oz	ounce
RDA	Recommended Dietary Allowances
RE	retinol equivalents
sl	slice
sm	small
Tbsp	Tablespoon
TPN	total parenteral nutrition
tsp	teaspoon
USDA	United States Department of Agriculture